

REMARKS

Claims 1-4 and 8-10 are pending in this application and Claims 5-7 and 11-20 are canceled herein. Reconsideration and allowance of all the claims are respectfully requested in view of the following remarks.

Information Disclosure Statement

The Action asserts that the Information Disclosure Statement (IDS) filed on June 16, 2006 fails to comply with 37 C.F.R. §1.98(a)(3). Applicants respectfully disagree with this conclusion and submit that it is incorrect. The Action asserts that the IDS fails to include a concise explanation of the relevance of each reference. As indicated in the IDS itself, however, either an English language translation or a corresponding (English language) U.S. application was provided for each cited foreign reference. Thus, no concise explanation was necessary. Accordingly, Applicants respectfully request consideration of the IDS and all of the references cited therein.

Claim Objections

The Action objects to the use of both uppercase "X" and lowercase "x" in Claim 1. Claim 1 is amended herein to correct the typographical error. Accordingly, this objection should be withdrawn.

The Action also objects to the use of "N" in the formulas of Claims 1 and 8 because "N" represents Nitrogen in the periodic table. While it is true that "N" represents Nitrogen in the periodic table, it is quite clear from the claims and throughout the specification, that Applicants have defined "N" in the present formulas to have a different meaning. In particular, "N" is consistently defined in the specification and claims *e.g.*, in formulas (1) and (2) as follows: "N

represents at least one element selected from Rh and Pt" (see *e.g.*, paragraphs [0010], [0015], [0018], [0023] of the specification, and claims 1 and 8.

MPEP §2111.01 (IV) provides that an applicant is entitled to be his or her own lexicographer and may rebut the presumption that claim terms are to be given their ordinary and customary meaning by clearly setting forth a definition of the term that is different from its ordinary and customary meaning(s). See *In re Paulsen*, 30 F.3d 1475, 1480 (Fed. Cir. 1994). Such is the case here, where Applicants clearly defined what they intend "N" to mean in the claims and specification. Accordingly, withdrawal of this aspect of the objection is respectfully requested.

Claim Rejection Under 35 U.S.C. § 112

The Examiner has rejected Claims 1-10 under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. In particular, the Action asserts that the wording "perovskite-type" in Claims 1, 8-10 is allegedly indefinite as to its metes and bounds due to the use of the word "type". Applicants respectfully submit that the term "perovskite-type" is commonly used in the art for compounds that are not literally Perovskite (*i.e.*, calcium titanium oxide, CaTiO₃, which is a relatively rare mineral), but which have the basic chemical formula following the pattern ABO₃, where A and B are cations of different sizes, and which compounds have a similar structure to perovskite.

MPEP 2173.05(a) (II) indicates that if the claims, read in light of the specification, reasonably apprise those skilled in the art both of the utilization and the scope of the invention, and the language is as precise as the subject matter permits, the statute (35 USC 112, second

paragraph) demands no more. Because the present claims, read in light of the specification, reasonably apprise those skilled in the art of the scope of the invention, and those skilled in the art would readily understand the meaning of this term, Applicants respectfully submit that the claims are not indefinite and no amendment is necessary.

Applicants further note that the term “perovskite-type” is in the preamble of the claims. The metes and bounds of the claims are clearly set forth after the preamble, where the claimed structures are clearly defined by several general formulas. Thus, for this reason as well, there should be no reason to amend the claims.

For at least the above reasons, Applicants respectfully request withdrawal of the rejection.

Claim Rejection Under 35 U.S.C. § 102

Claims 1-2, 4-5, and 7-8 were rejected under 35 U.S.C. § 102(b) as allegedly being anticipated by WO 03/008095 (“WO ‘095”).

WO ‘095 describes materials with a perovskite structure in the form of solid solutions (see Claim 1) used as catalysts for catalytic mufflers for motor vehicles (see e.g., Claim 8). WO ‘095 is specifically directed to materials that have the general formula:



where A (in the above formula) is Ba or a rare earth element; and B (in the above formula) is Pt, Ir, Pd, Rh or Ce. (See page 2, lines 8-11 of WO ‘095).

In the present claims (as amended herein), the element located at the B site of the perovskite-type composite oxides has Ti as a main component. In contrast, the element located at same site of the perovskite-type composite oxide of WO ‘095 (as set forth e.g., in the

specification and in Claim 1) is Zr. Present claims 1-4 and 8-10 (as amended herein), do not have Zr as a possible B component and therefore, are not anticipated by WO '095, which requires Zr in this position of the formula.

For at least these reasons, Applicants respectfully submit that the present claims are not anticipated by WO '095.

Claim Rejections Under 35 U.S.C. § 103

Claims 3, 6, and 9-10 were rejected under 35 U.S.C. § 103(a) as allegedly being obvious over WO '095 in view of U.S. Patent No. 5,380,692 (Nakatsuji et al.).

As indicated above, present claims 1-4 and 8-10 (as amended herein), do not have Zr as a possible B component, whereas the structures of WO '095, each require Zr in the formula. For at least this reason, Applicants respectfully submit that the present claims are not obvious over WO '095.

Additionally, Applicants submit that Table 1 shows superior results of the present composition, as compared to the compositions of WO '095. In particular, as shown in Table 1 of the present specification (see pages 67-68 of the specification), compositions that fall within the scope of the present claims, (that is, those having Ti in the B site of the perovskite-type composite oxide - Examples 1-4, 6-9, 12-13 and 17) are superior in NO 30% purifying temperature to those compositions that include Zr at the B site of the perovskite-type composite oxide (See Examples 5, 10, 16 and 18).

For example, Example 1 for which the composition is $\text{CaTi}_{0.95}\text{Rh}_{0.05}\text{O}_3$, has a NO 30% purifying temperature of 223°C , as compared to a temperature of 260°C for Example 5 in which Zr replaces Ti at the B position, and thus, having the formula $\text{CaZr}_{0.95}\text{Rh}_{0.05}\text{O}_3$.

Similarly, Example 9 for which the composition is $\text{BaTi}_{0.95}\text{Rh}_{0.05}\text{O}_3$ has a superior NO_x 30% purifying temperature of 223°C, as compared to a temperature of 252°C for Example 10 in which Zr replaces Ti at the B position, and thus, having the formula $\text{BaZr}_{0.95}\text{Rh}_{0.05}\text{O}_3$.

As set forth in WO '095 “[t]he most promising catalysts for the above goals are those containing rhodium in a high melting and non-acidic matrix, such as those of the $\text{BaZr}_{1-x}\text{Rh}_x\text{O}_3$ systems proposed here.” (Emphasis added, page 6, lines 6-8 of WO '095). Accordingly, the reference itself makes clear that the disclosed composition having Zr at this position is the desired composition for the results to be achieved therein.

Page 5 of the Action acknowledges that WO '095 does not teach titanium, but it alleges that it would have been obvious to substitute titanium for zirconium, as they are group IVB metals having similar properties. However, Applicants respectfully submit that given the specificity of the structures of WO '095, each explicitly requiring zirconium and providing no options therefore (unlike other components of the structure, which have several options), there does not appear to be any reason why one skilled in the art would substitute a different element therefor, with any expectation of success.

The Action further alleges that it would have been obvious to substitute titanium, because titanium is known to be used in perovskite structured materials, citing Nakatsuji et al. Nakatsuji et al. includes titanium as one of numerous possible components in a genus of structures that may be useful for catalytic reduction of nitrogen oxide. This is a completely different purpose than that of WO '095, *i.e.*, for the catalytic combustion of methane for power applications, and there is no reason to believe that the elements should or can be interchangeable for these different purposes.

Moreover, as explained above, the present specification shows the superior results of compositions having titanium as opposed to zirconium in the B position of the composition.

For at least the above reasons, Applicants respectfully submit that it would not have been obvious to modify the teachings of WO '095 to try to arrive at the presently-claimed catalysts and reconsideration and withdrawal of the obviousness rejection is respectfully requested.

Because each objection and rejection has been addressed and obviated herein, Applicants respectfully request allowance of the application.

If the Examiner believes that there is any issue which could be resolved by a telephone or personal interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number listed below.

Applicants hereby petition for any extension of time which may be required to maintain the pendency of this case, and any required fee for such an extension or for any net addition of claims is to be charged to Deposit Account No. 50-0951.

Respectfully submitted,

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